

HEAT INJURIES

Applies to Heat Stroke, Heat Exhaustion, and Unspecified Effects of Heat

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) for the purpose of epidemiological surveillance of conditions important to military-associated populations. In order to identify cases, the definition takes advantage of outpatient and inpatient medical encounters and cases reported through the Tri-Service Reportable Events system.

Clinical Description

Heat stroke is a form of hyperthermia, in which the body temperature is elevated dramatically ($>104^{\circ}$), often accompanied by physical and central nervous system dysfunction. Heat stroke is considered a medical emergency that can be fatal if not properly treated. Heat exhaustion is an acute reaction to excessive heat often accompanied by profuse sweating, dizziness, nausea, headache and fatigue. Children, elderly, athletes, and obese people are at higher risk of developing heat illness.¹

Case Definition and Incidence Rules

For surveillance purposes, a case of “heat-related injury” is defined as:

- *One hospitalization or outpatient medical encounter* with any of the defining diagnoses of heat-related injury (see ICD9 code list below) in either the *primary* or *secondary* diagnostic position.
- One record of a reportable medical event (RME) of a heat-related injury.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a defining diagnosis of heat-related injury.
- An individual is considered an incident case only *once per calendar year*.
- An individual is allowed one event per category, (i.e., heat stroke, heat exhaustion, or other heat injuries) *every 60 days*.
- For individuals with more than one heat injury diagnosis in a calendar year, diagnoses of heat stroke are prioritized over other heat injury diagnoses.

Exclusions:

- None

¹ Fauci, Anthony S., et al. *Harrison's Principles of Internal Medicine*. 17th ed. United States: McGraw-Hill Professional, 2008.



Codes

The following ICD9 codes are included in the case definition:

Condition	ICD-9-CM codes	CPT Codes
Heat Injuries	992.0 (heat stroke and sunstroke) <i>Other heat injuries:</i> 992.3 (heat exhaustion, anhydrotic) 992.4 (heat exhaustion due to salt depletion) 992.5 (heat exhaustion, unspecified) 992.9 (unspecified effects of heat)	NA

Development and Revisions

- Case definition originally developed by the AFHSC Medical Surveillance Monthly Report (MSMR) staff for a MSMR article on heat injuries.²

Case Definition and Incidence Rule Rationale

- For the purpose of analysis, when calculating incidence rates, this case definition allows an individual to be an incident case only once per calendar year. When calculating *counts* of specific heat related events, this case definition allows an individual to have one event in each category, i.e., heat stroke, heat exhaustion, or other heat related injury, every 60 days.

Code Set Determination and Rationale

- Tri-Service Reportable Events:* In the most recent version of the Tri-Service Reportable Event guidelines, “Heat Injuries” includes ICD9 code 992.0 “heat stroke” and ICD9 code 992.9 “unspecified effects of heat.” ICD9 codes 992.3-992.5 “heat exhaustion” are subsumed into the broader category of “unspecified effects of heat” with a focus on the need to document organ tissue damage in order for a case to qualify for reporting.
- Code lists used by the Agency for Health Research and Quality (AHRQ) were considered in the development of this definition.

Reports

AFHSC reports on heat-related injuries in the following reports:

- Annual MSMR article; published in March.
- Monthly: Armed Forces Health Surveillance Center. *Sentinel reportable events among service members and beneficiaries at U.S. Army, Navy, and Air Force medical facilities.* Medical Surveillance Monthly Report (MSMR); includes only reportable medical events.

² Armed Forces Health Surveillance Center. Update: Heat Injuries, Active Component, U.S. Armed Forces, 2009. *Medical Surveillance Monthly Report (MSMR)*. 2010 March; Vol 17(3): 6-8.



Review

Dec 2010 Case definition reviewed and adopted by Surveillance Methods and Standards (SMS) working group.

Mar 2010 Case definition developed and reviewed by AFHSC MSMR staff.

Comments

None

